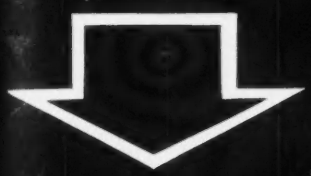

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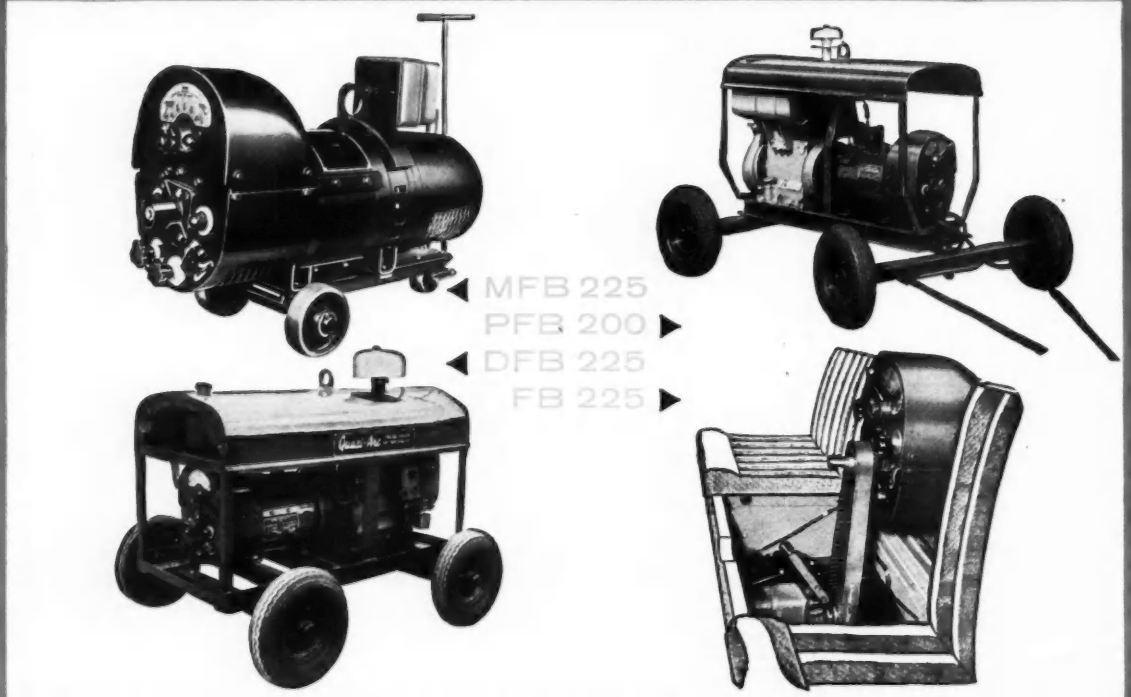

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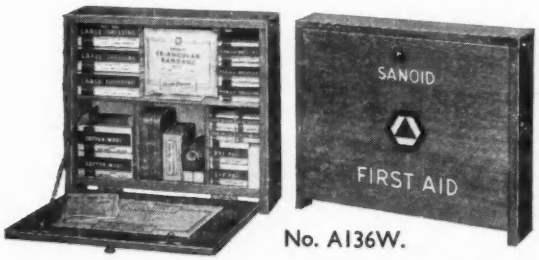

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Gas Journal

VOLUME 306 • NUMBER 5102 • 113th YEAR

WEDNESDAY, JUNE 14, 1961

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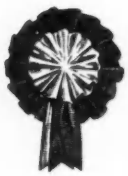

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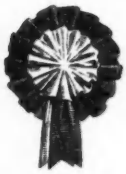

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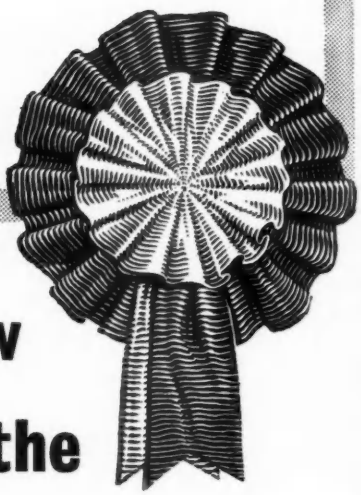

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Gas Journal

COKE OVENS • BY-PRODUCTS • CHEMICALS

Re-building the gas cooker load

THE year 1961 may well go down in gas history as the year in which the industry awoke to the danger threatening the gas cooker. It is to be hoped that 1963 will be the year in which the rescue of the gas cooker load is made complete. In the meantime, however, there is much to be done, and quickly.

The long-cherished (and perhaps taken for granted) numerical supremacy of the gas cooker over its electric competitor is in jeopardy. Sales of the two appliances are almost equal, and if nothing is done to check the rapid upsurge of electric cooker business, gas will have lost a superiority which has long been one of the foundations of the gas industry's prosperity and prestige.

How is it that this situation should have crept up on us virtually unnoticed? Many will deny that it was unnoticed, but how else can one explain the marked absence of papers, campaigns and directives aimed at stimulating this once assured, but now only too vulnerable, load? We suggest there may be several reasons. One is the degree of effort put into the sales drive for room heaters and central heating installations. While we would be the first to endorse the need for a great effort to build up this virtually new load, we suggest that to some extent it has been done at the expense of cooker sales. It is of course much more exciting to sell gas space heating since one is breaking new ground, but the value of this new business is lost if there is erosion of the existing cooker load. Moreover, any risk of losing gas cooking in a property makes the sale of gas-fired space heating extremely unlikely. If the cooker goes, the meter will almost certainly go too. But just as looking after the cooker business leaves the door open for selling space heating, so the sale of space heating can strengthen the gas cooker's hold on the household. In other words, the two are interdependent. What we are suggesting, however, is that the possibility of selling the second appliance has tended to obscure the need to protect the first.

This, we believe, is one reason for the loss of new cooker business, but there may well be others. Who can deny the improvement in the electric cooker, both in design and efficiency? This appliance is gradually living down its reputation for slowness, lack of control and expensive maintenance, and it is unquestionably better looking. In fact the electric cooker is becoming a U appliance—a trend which may be detected in kitchen backgrounds on television and elsewhere. The attraction of automatic cooking is also very real.

All this switches attention to our own products and poses certain questions: Is gas cooker development too slow? Are manufacturers short of ideas? Or if the ideas are there, are they being slowed up in the testing process, in the industry's selection machinery or in gas boards' fickle purchasing methods? Is the gas cooker losing prestige because of faults in the quality of manufacture? Is the industry failing in its task of publicising the benefits of gas for cooking?

To find the answers to at least some of these questions 'GAS SERVICE' recently put 20 questions on the cooker market to four well-known people in the gas cooker industry, who kindly agreed to submit to this inquisition. The four concerned—Mr. C. T. Baker-Carr (Radiation New World Ltd.), Mr. S. A. King (R. & A. Main Ltd.), Mr. F. M. Rogers (Sidney Flavel & Co. Ltd.), and Mr. R. A. Smith (General Gas Appliances Ltd.)—were interviewed independently and, in the report which forms the main feature of the June issue, their answers are set out side by side.

Broadly speaking, the questions fall into two categories —those concerned purely with cooker design, and intended for the most part to settle some hoary old points of debate; and those concerned with cooker sales policy in the gas industry.

The answers to the former may be summarised fairly easily. The panel was evenly divided on the relative merits of gadgetry (or 'features') and price, and also on the desirability of incorporating, at the present stage of development, automatic ignition to the oven. They were on the whole opposed to the incorporation of automatic cut-off to all burners and to the use of neat

gas burners; and there was 75% opposition to the utilisation of electricity on the gas cooker.

All agreed that there was a future for the gas cooker without a clock-controlled oven, but it was generally felt that automatic cooking should be available as an optional extra on all models. A question on cleanability of the oven—which everyone thought to be of major importance—brought forth varied, and on the whole rather unsatisfactory, replies which emphasised the technical difficulties involved; it was pointed out that because gas cooker ovens have lighter colour enamels than is the case with electric models, they *appear* to need more cleaning. There was also diversity of opinion on the matter of fitting a burner to the storage drawer.

There was general agreement on colour, it being felt that a basic white or cream would meet the bulk demand, provided that taps, trim, etc. were available in a range of colours and could be changed readily. There was also agreement that the vexed question of establishing a desirable hotplate height for gas cookers could not be resolved until the manufacturers of kitchen cabinets make up their minds on the matter.

More frequent changes

In the view of the panel, consumers must be encouraged to change their cookers more often and this can best be done by ensuring that major developments are introduced sufficiently frequently to make the housewife *want* to replace her appliance. The solution to this may appear to rest with the panel and their fellow manufacturers, but there is clearly a feeling that the atmosphere of the industry is not conducive to the stimulation of new ideas; there is thought to be a failure to give the manufacturer a lead and to support his development efforts.

There is another side to this as was revealed at a recent meeting of the Eastern Gas Board's Tottenham Sales Circle by Mr. H. W. Merrison, the Divisional Service Officer. Dealing with complaints, and having admitted the weaknesses of gas board organisation and of the human factor, Mr. Merrison took a swing at the manufacturers and what he termed 'factory-made' complaints.

'For sheer dissipation of customer goodwill', he said, 'I have never experienced anything like the faults and failures which have attended these so-called advances in production methods. . . . Up to a point one can understand certain production faults. We are all aware of the factory tug-of-war between production and inspection and one has to be a little tolerant. Though this does not excuse the design fault which comes to light only when the customer starts to use the service the appliance is supposed to give. These things have all been through the testing ritual.'

To add discomfort to the gas board's dismay, then come the explanations. The pilot 'cokes' up, there are impurities in the gas, the wires touch, or 'under certain conditions so and so happens'. 'We know damn fine they do,' contined the speaker with Merrisonic gusto, 'but in what sort of camera obscura world do the design and lab. boys live? You get these cases and you almost live in the customer's house. You give your apologies and explanations with about as much hope and conviction as if you were offering Scout's Honour to your bank manager. The awkward part about all this is that it is in this very field of new appliance performance (or non-performance) that "the others", the customers in their homes, see us not in our strength as undertakings giving a day and night service—"burning to serve"—but in a moment of helpless weakness'

A rational approach

What to do about it? 'Well there's the rub', admitted Mr. Merrison. 'You cannot stop progress, and extraordinary progress has been made. If you clamp down on new ideas and new methods, or in any way thwart improvements you become moribund. We could stop the defects tomorrow by going back to black cookers. Nevertheless we must have a rational approach. We must not indulge in a useless race for novelty, introducing new gadgets each year without regard to last year's one which still will not work.'

Mr. Merrison mentioned 'the drain on our goodwill' and this raises the familiar 'image of gas' on which subject our panellists had a good deal to say. Failure to project a satisfactory image was put forward as the main reason for the narrowing gap between sales of gas and electric cookers. It was generally agreed that, despite some excellent advertising in certain boards, gas cooker advertising as a whole left a good deal to be desired. One significant point is that three out of the four people interviewed, quite independently, made particular reference to the Board advertisement, 'London's 500 leading chefs now choose North Thames Gas to cook on'.

No TV enthusiasm

Nobody seemed very enthusiastic about television as an advertising medium for goods of this nature, and everybody was emphatic in their belief that no co-operative TV effort between manufacturers and the Gas Council would work.

The last question, 'What must the gas industry do to maintain, and if possible increase, its cooker load?' was perhaps the most important, and the replies were worthy of thought by all concerned with the industry's wellbeing. It was suggested that the industry must get the right approach to its advertising, projecting the conception of gas as a modern fuel; that space heating sales must be regarded as complementary to cooker sales, operating, from the point of view of tariffs, as a package deal; that higher discounts should be given to many more sales outlets; that the industry should concentrate on low-cost maintenance; that showrooms should be kept open for the entire week and sales people should be given an incentive to go out selling in the evening.

Basically the gas cooker still has almost all the advantages, but unless these advantages are brought home to a public dazzled by the electricity image, they will be of no avail.

From the Presidential Address to the Wales and Monmouthshire Junior Gas Association.

Forward with gas

By W. E. WHITNEY, M.I.GAS E.,
DEPUTY GENERAL MANAGER AND ENGINEER,
NEWPORT UNDERTAKING, WALES GAS BOARD.

WE are experiencing a true renaissance of the gas industry. Nowhere is this more true than here in Wales where great developments are occurring. Along with the vast new steelworks and industrial enterprises our industry has shown marked progress, and a firm foundation has been laid for continued expansion. We are only just beginning to appreciate fully our own competitive strength in the fuel market. It is only comparatively recently that the newer processes, methods and plants, together with greatly improved appliances have become truly effective.

Sales of space heaters were the highest ever recorded in 1959-60—10,000 gas-fired central heating boilers and 3,000 warm air heating units were installed. Refrigerator sales were the highest ever at 88,000, compared with 50,000 in the previous year. Water heater sales increased by 35% . . . and so on. I think that we are breaking through in a big way in refrigeration and space heating. Certainly with warm air units where sales this year have already reached 6,000. For every refrigerator sold in Wales in 1956 we now sell 20, and there is a tremendous potential sale available.

Convector fires

The modern convector gas fire with the 'non-gassy' look has proved our greatest sales asset. The Board's architect's strong condemnation of the emphasis and display of portable gas fires, has culminated in the withdrawal of portable fires from showroom displays, and large numbers of convector fires being sold where formerly a portable fire would have been used. Each convector fire fitted in a living room is worth 250 therms per annum, and in many cases it will introduce a gas-fired water heater worth a further 150 therms per annum. Now is an excellent opportunity, too, to introduce a domestic type gas-fired incinerator.

Important and valuable as the sales of fires undoubtedly are, the aim in new housing must be to introduce a more complete form of heat service, giving rise to a higher level of gas consumption, and preferably of a type designed to suit the dwelling. In my own undertaking, Newport, where we have a number of fanned air installations, we are obtaining annual gas consumptions in the region of 500 to 700 therms per consumer.

There is a particularly good case to argue with fanned air heaters when often the installation, together with a complete water heating service, can be fitted at a cost below £120, a sum which can often be covered by the associated savings in building construction[1].

The Board showed considerable faith in the future of domestic gas sales when they introduced the domestic two-part tariff whereby, after payment of the standing charge gas is obtained at half price, which makes it competitive throughout Wales with any other fuel.

Initially, there were financial losses because it simply meant that large blocks of consumers had the gas cheaper, but the expansion of domestic gas sales in the past two years has justified the Board's faith; it has also given advantage to consumers in providing a first rate heat service at a modest cost. These increases in consumption have been obtained despite exceptionally mild winter weather.

There can be no doubt that the industrial gas advisory service set up by the Board has made a major contribution to the rapid expansion of the industrial load. The grid systems have assisted materially in providing the means to effect major development in this field and there are a number of large consumers, including the largest individual consumer in the area, supplied direct off the grid mains. The grid extensions have made a major contribution in assisting industry and the prosperity of the areas which they serve.

Most industrialists have come to respect the reliability of gas as a fuel, its ease of control, and many other advantages. They often choose it for these advantages, even if it costs several pence per therm more than alternative fuels. But to develop the industrial field fully the price has to be right, particularly for the larger loads. The Gas Council have stated that new manufacturing processes should be capable of producing gas at a cost, inclusive of capital charges, of 10d. per therm.

Commercial sales

Less spectacular has been the trend in commercial sales where for the most part the increases have been in the large scale central heating load. The concentration of bread baking in large plants has resulted in economies which tend to reduce consumption. This class of consumer is vulnerable to competition from fuel oil.

Most large scale commercial organisations decide their fuel policy at their head offices far removed from local undertakings. It appears that it is essential for regular contact with large commercial organisations to be made at the highest level in order to ensure that gas is considered at the planning stage for new shops, banks and other commercial premises.

With the accent on food hygiene it should be possible for us to add a considerable load with single point water heaters in shops and other premises handling foodstuffs.

It may be advantageous in the long run to adopt a two-part tariff for commercial gas. The relative proportions of the standing charge and commodity rate would be a matter for research by accountants.

Two factors largely determine the development of gas and appliance sales, namely, price of the commodity and

service. It is vital to ensure that our installation standards are of a high quality and after-sales service is effective and speedy. The standard of service is the yardstick by which our success or otherwise is measured in the minds of the public[2].

Many developments have taken place in the past five years which are calculated to improve installation standards, including the general use of copper tube and fittings, considerable emphasis on the safety factor, and the introduction of standard fittings packs for the various types of appliances.

The introduction of radio communication on service vans has made a great improvement in the speed with which essential jobs can be carried out and has also reduced labour costs.

There is a growing trend to improve mobility of fitters and technical staff by providing transport, and in the majority of cases considerable savings result. The rise in the level of wages makes it very necessary to minimise travelling and unproductive time for district staff, and independent transport is of material benefit in effecting these aims.

Abundant supply

To be assured of a bright future in the years ahead gas must be available in abundance and at a competitive price. Since the nationalisation of the gas industry in 1949 we have seen a major transformation in the arrangement and method of obtaining gas supplies.

Widespread integration schemes based upon gas production in large stations have been a salient feature of development. There has been a considerable increase in the volume of low priced coke oven gas purchased from outside suppliers. Our own grids in Wales are largely based on this source of supply.

With the usual carbonising process we appear to be reaching the technical limit of increased efficiency. At any event it is certain that further improvements will be small and will only be gained at a relatively high cost and as a result would be uneconomic. Where then can we turn for large supplies of low priced base load gas in the years ahead?

In Scotland and the West Midlands two Lurgi plants are being constructed to process small coal—an inconvenient fuel with a limited market. This process will give a low priced gas in large quantities and could be a major solution to our problem. An investigation of the economics of operating a Lurgi plant with a daily output of 109 mill. cu.ft. has been carried out by the East Midlands Gas Board. The plant would be situated at the pithead and work at a load factor of 86.5%. The cost of gas delivered at high pressure into the grid system has been calculated at 9.0d. per therm inclusive of capital charges. This corresponds closely to the views stated by the Gas Council that new gas-making processes to give a good competitive basis should supply gas for distribution at a cost including capital charges of 10d. per therm.

The Lurgi process has the further advantage of developing a single fuel industry. The National Coal Board have recently indicated a willingness to consider sharing the establishment of Lurgi plants as a joint venture with the gas industry. This arrangement, if implemented, would allow gas to be produced at a lower cost than the figure quoted previously.

Trial shipments of natural gas have been delivered to the North Thames area and this source of supply offers interesting possibilities, particularly as natural gas has a high calorific value, is sulphur free and non-toxic—all of these qualities being expressly sought by the leading authorities in the gas industry[3].

French scientists are at present studying the economics of laying a pipeline 36-in. diameter across the Mediterranean to convey natural gas from the Sahara to Europe.

Mr. Odier of Gaz de France[4] has spoken of this development before District Sections of the Institution and said that the basic cost of the natural gas was 1.7d. per therm and that it could probably be transported by pipeline to North Europe for 3.5d. per therm.

Enormous resources are available in the Sahara and it seems likely that transportation from this area by pipeline would be less costly than by the use of tankers. In addition the capacity for delivering gas would be immensely increased by pipeline crossings. It is evident that the Gas Council feel that importation of natural gas will have considerable economic advantages.

The big question remaining unanswered on this subject is whether or not the gas industry will be allowed to import large quantities of natural gas.

An indigenous source of natural gas in the form of methane from the mines is already being exploited on a wide scale by the various area boards, particularly in Wales, where a number of pits are piped to the grid systems. A great potential is available in the South Wales area, and there is the possibility of draining methane from 24[5] pits giving a coal gas equivalent of 15 mill. cu.ft. per day.

After meeting the base load requirements the big problem that confronts the gas industry is that of the peak load.

Since our main expansion in the years ahead will probably be derived from space heating sales, it is likely that the seasonal and peak loads created will bring difficulties.

Very cold winters with temperatures in the region of 20°F. occur on an average every ten years, and generally the very severe conditions are of short duration. Peak load plant must therefore be low in capital cost and low in labour requirements. After all these plants may only work for one week every ten years.

It has been found that a peak load gas comprising butane and a diluent can be supplied at a cost of approximately 11.5d. per therm (excluding capital charges). The liquid petroleum storage and vaporising plant has a comparatively low capital cost and does not require operating labour.

Liquid petroleum

For these reasons 'l.p. plants,' have been installed in many undertakings in the past few years, and a considerable number will be employed in the Wales area. However, the use of butane/diluent is limited as it has a marked effect on the overall combustion characteristics of the mixed gas, if it exceeds 12% by volume of the gas normally supplied.

All the major carburetted water gas plants in Wales are now being fitted with equipment for reforming butane in the fuel bed of the generator. This reforming is expected to increase the output of these plants by 25% and give a final gas similar in combustion characteristics to the coke oven gas normally supplied. The carburetted water gas plant in itself is a peak load unit, and the boosting of output may be referred to as 'high peak operation.' In other areas p.f.d. has been used with success to give similar results to those we expect from the use of butane.

Attention has been focused on other methods of obtaining cheap storage facilities. In the Northern Gas Board area[6], underground storage of gas is practised at Billingham. Given suitable geological strata in other areas this could provide a means of storing large volumes of gas at low cost to meet seasonal and peak loads.

When handling large volumes of gas at a steady pumping rate the high pressure steel pipeline becomes the most economical method of conveying potential heat energy.

The development of grid systems is now well advanced in all the area boards, but in the Wales area the system is proportionately more advanced than elsewhere. Pipelining techniques, whereby rapid progress of mainlaying can be carried out, are now well established.

The use of giant Lurgi plants, together with the handling of overseas imports of natural gas, would require a major grid system to transport the large volume of gas into the area grid systems. In fact a 'super' or national grid, possibly working at pressures of 800 p.s.i. linking the new plants and natural gas terminals.

The cost of the steel tube for this grid would not be much more than that required for tube handling gas at pressures of 10 p.s.i. The cost of the tube is generally of the order of 60% of the pipeline cost. Therefore, a 'super' grid pipeline handling exceptionally large gas volumes would give very low costs for gas transmission. In computing probable costs with a 30-in. diameter pipeline it has been shown[7] graphically that the total cost of pumping 600 mill. cu.ft. of gas per day over a distance of 100 miles would be at the rate of .56d. per therm.

A 30-in. diameter pipeline between London and Manchester, serving a 70-mile wide belt along the pipeline, would serve 70% of all existing gas supplies and the area would cover 70% of the available gas-making coal supplies. Such a pipeline could provide the basis for a national grid. This, together with low priced gas from the new plants, could make gas, today's best fuel, into tomorrow's best, and universally cheapest fuel.

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TEN YEARS OF GAS LIQUOR

TEN years have passed since gas liquor first came into general use as a popular form of liquid nitrogen. It is appropriate, therefore, to take stock of the present position and review the facts which have emerged during that period.

The fact that the distribution of this fertiliser is in the hands of a comparatively small number of contractors, each responsible for a prescribed area, precludes advertising on the national scale which its competitors enjoy and which keeps them continuously in the public eye.

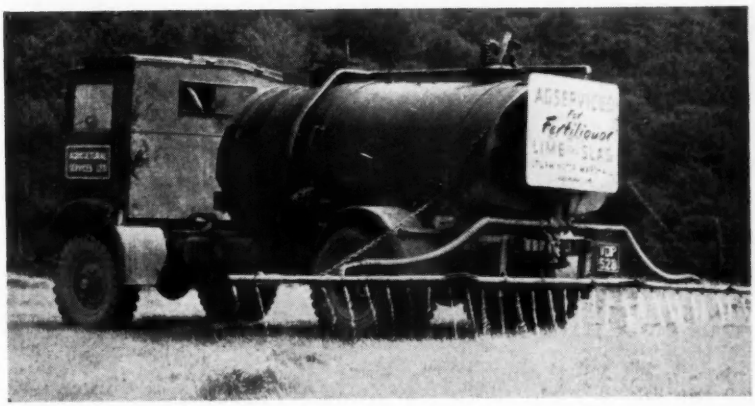
Nevertheless, the application of gas liquor to farm crops has made astonishing strides. In the past year 80 mill. gal. were distributed to farms in this country, compared with 6 mill. in 1953—a 13-fold increase in seven years.

There are, unfortunately, still a few areas where it is not yet available, and possibly may never become available at a competitive price. The reason for this is the integration of the gas industry, consequent upon nationalisation, and the concentration of gas manufacture at fewer, more efficient, stations from which the gas is fed into grid systems which cover vast areas.

It is inevitable, therefore, that the liquor has to be transported over greater distances than when there were many small gasworks scattered about the countryside. Also, in some areas, gas boards find it expedient to concentrate all available liquor for the production of sulphate of ammonia.

It is basically the same material which farmers have been using for generations in the form of sulphate of ammonia. The only significant difference is that it is entirely a British product, requiring neither imported elements, nor expensive plant to convert it into usable form and, being a liquid, it is much easier to apply.

Nor is its use on the land a new idea. Records show that nearly 120 years ago it was being applied to grassland by a Lancashire farmer, who, incidentally, borrowed the town water cart for the purpose.



This 1,000 gal. applicator is spraying gasworks' liquor which is being used as a spring dressing for grassland. The liquor was brought direct from Hilsea gasworks at Portsmouth and is being applied as a fertiliser at Weston Farm, Petersfield, Hants.

It goes by a number of different names in different parts of the country: Ammoniacal liquor (the official gas industry term), ammonia liquor, nitrogenous liquor, nitro-liquor, or simply gas liquor. It is produced in the process of eliminating the ammonia products from town gas, and its principal constituents are ammonia and ammonium salts, together with minute amounts of other elements. It is these other elements which probably give gas liquor its weed and pest controlling characteristics.

It is quite harmless to cattle. Indeed, they often show a marked liking for it and will lick the sprayboom of the spreader if they get a chance, and will graze a recently treated pasture rather than an untreated one.

While the composition of liquors may vary slightly in relation to the type of coal, the design of carbonising plant, and the point in the purifying process from which they come, the ammonia content of the product finally supplied to the farmer remains fairly constant at a figure which gives about 1.78% nitrogen at 10 oz. strength.

As a basis of comparison with solid forms, it may be said that 400 gal. per acre of 10 oz. liquor gives a dressing closely equivalent to 3 cwt. of sulphate of ammonia.

First and foremost, gas liquor is a cheap and efficient form of nitrogen that can be applied to grass at almost any time of year, provided the grass is short at the time of application, and to most other crops according to season. There is little or no leaching in normal conditions, and, being a liquid, it gets to work quickly when solid fertilisers may lie useless on the surface for weeks before the rain, or heavy dews, wash them in.

It has marked weed-controlling properties and is particularly effective in this respect when applied as a top-dressing to kale. It must not be taken for granted, however, that it will always, in all circumstances, control weeds. It is a purely fortuitous characteristic; but nine times out of ten, if the conditions are favourable, it will do so.

By reason of its alkalinity (pH = 9) it is fair to suppose that over a period of regular use, less lime (or none at all) will be required to correct soil acidity. It leaves no harmful acid salts behind; and ten years of continuous application have shown no detrimental effect on soil structure.

There is growing weight of evidence that in addition to controlling weeds it also controls not only slugs and wireworm, but many of those other scourges which take such a toll of cattle and sheep, e.g., husk, liver fluke and stomach and intestinal worms.

The price of gas liquor may vary slightly from one area to another, dependent to some extent on the distance it has to be hauled from gasworks to point of use. Generally speaking, however, the cost to the farmer, after deduction of subsidy which it attracts at the same rate as other forms of nitrogen, is much the same as that of solids. But there is a very important difference. When the farmer buys gas liquor what he pays for is nitrogen in the ground.

With solid forms he is involved in handling and haulage from the railway station if he buys in bulk by rail; unloading into barn, where it takes up valuable space which could better be employed storing hay, straw or implements; handling out of barn on to trailer and again from trailer to distributor; fuel, oil and labour for spreading; wear and tear of implements; and, finally, cleaning down and greasing the distributor after every job to avoid corrosion.

Anyone who cares to work out what all these items represent in terms of hard cash will very quickly realise which of the two types of nitrogen is the cheaper. With liquor, all that is necessary is a telephone call or a post-card to the contractor.

This is essentially a contract operation, for although tolerances are fairly wide in methods and rates of application, it is a specialist job inasmuch as it requires expensive equipment, and its handling comes within the Alkali Regulations. Moreover, gas boards' output is normally sold in bulk to authorised contractors, who are mostly members of the National Association of Agricultural Contractors, and who have built up over the years a knowledge and experience of distribution and application as well as the goodwill of the gas industry.

The latter would probably be opposed to selling small quantities of liquor outside this organisation, whose members also look after the subsidy routine as do the agricultural merchants in respect of solid fertilisers. Nor should farmers imagine, even if they could get the liquor, that they could use their low-volume crop sprayers to apply it. It just would not work by that method.

Actually, it is not normally sprayed at all, but trickled on to the ground from open-ended nozzles fitted at about 6-in. intervals along the boom. The nozzles are calibrated to give the correct rate of delivery in relation to the operating speed. Where weed-control is desired, spreaders are fitted beneath the nozzles to transform the individual streams of liquor into a continuous curtain to give complete coverage of the foliage.

An applicator (on the left of picture) is being re-filled from a 3,500 gal. tanker.

This close-up of a sprayboom shows how the liquor is applied to farmland.

The separate streams put the liquor on the ground with a minimum to scorch but at the same time have not the weed-controlling effect of complete coverage.

Many farmers were at first disturbed at the apparent burning effect of the liquor. It has been proved that it is nothing to worry about, however, and within a couple of weeks it will almost entirely disappear. If it did not scorch it would probably not control weeds and pests.

The liquor is collected from the gasworks in tankers and usually conveyed directly to the point of use. Here, if the conditions are suitable, the tanker will proceed straight on to the field and get to work. In other circumstances, the liquor may be transferred to smaller tankers or tractor-drawn bowsers for the field work. When working on particularly hilly ground pressurised spreaders may be used to overcome any tendency to uneven distribution of the last few hundred gal. in the container.

Rates of application will obviously vary according to the crop, the season, the type of soil and the personal ideas of the individual farmer. It must always be remembered that gas liquor is NOT a complete dressing in itself. Unless the other soil requirements are met it cannot be expected to give results. The phosphate and potash elements can either be provided in solid form and distributed in the traditional way, or they can be provided in soluble form and mixed in with the liquor by the contractor in various plant food ratios.

For top-dressing corn a fairly light application, say 200 gal. per acre of 10 oz. liquor would probably meet the case if a solid compound has already been used in the seedbed. Otherwise a full liquid compound could be used as a pre-dressing.

Applications to grassland depend on whether the farmer likes a heavy dressing in the early spring, or prefers 'little and often'.

Many farmers put down 300 to 400 gal. per acre in February or March, before growth has started, followed by lighter applications after the first and subsequent cuts or bites. Remember again that the grass must be short at the time of application to get the best results. Also, it is not desirable to top-dress very young seeds, because the check to the plant may outweigh the stimulus of the nitrogen.

Liquor normally gives a substantial increase in the carotene content of grass, which is important to grass-dryers and others who set store by the carotene content. This effect is additional to the increase in protein and total bulk which follows the application of any form of nitrogen.

For kale, much heavier dressings are used, anything from 600 to 1,000 gal. per acre, applied at the four-leaf stage, with spreaders if weed-control is required. The scorching here will be considerable, but again the crop will usually have recovered in a couple of weeks and will be growing vigorously ahead of the weeds.

For other specialised crops the farmer should seek the advice of his contractor. It may be mentioned that liquor is also used to help rot down straw stubble after the corn harvest, by providing the food for the bacteria which break down the straw. For the same reason liquor helps to make good compost.

It is unfortunate that there are few results of field trials on a commercial scale available; but such experiments as have been carried out on a commercial basis have shown a marked advantage in the use of gas liquor—as much as 30% better in terms of dry matter than grass dressed with equivalent amounts of sulphate of ammonia.

Similarly, experiments to show the weed-controlling effect of liquor on kale gave striking results from liquor applied at 660 gal. per acre, with almost complete control of a heavy infestation of charlock and fathen. Moreover, the residual effect of the liquor showed up very

clearly on the treated areas right through until the following mid-summer after the field had been direct reseeded to a ley.

Fuller details of these experiments are contained in a booklet 'Nitrogenous Liquor as a Fertiliser' written by F. Clifton Sherriff for the N.A.A.C. (obtainable from their offices at 52, Bedford Row, London, W.C.1.). Both these trials were carried out on chalk land in Southern England; and while it would be unwise to claim that the results should be accepted as typical of what might be expected on all other types of soil, they must nevertheless remain the major guide to the performance of this fertiliser until similar trials can be carried out in other areas.

The objections to the use of gas liquor are comparatively minor ones but must, in fairness, be mentioned. That of scorch has been already noted; but it is nothing to worry about and will be very little apparent when the foliage is short and the weather moist.

Dissatisfaction, where it occurs at all, almost always stems from inaccuracies of application rather than from any demerit in the fertiliser. Careless spreading shows up much more quickly and clearly than with solid forms. And that smell!

Regular users have by now become inured to the caustic comments of their down-wind neighbours. Farm odours are many and varied. But anyone who has lived close to some badly made silage will very readily exchange this for the transitory and, incidentally, healthy smell of the gasworks.

To summarise, here is an easily applied and quick acting nitrogen at a price in the ground cheaper than any other known form, liquid or solid. It has a number of ancillary advantages, such as alkalinity and weed and pest control, which cost the user no more.

It can be applied at almost any time with little or no loss. It takes up no storage space in the barn. It involves the farmer in no labour, fuel or handling costs; no wear and tear; and it releases staff for other more important jobs at busy periods.

It has been well tried and tested over a decade of practical application—and has not been faulted in any major respect.

DUTCH FARM EXPERTS SEE HOW IT IS APPLIED

Left to right: Mr. Clifton Sherriff, Dr. Kuipers, Mr. Sluijsmans, Mr. Dijkema, and Mr. Johns.

● **ON A TEN-DAY** tour of this country to study British fertiliser production and practice, a party of Netherlands agricultural experts spent their first day in Hampshire, obtaining information on the use of gas liquor. It was in Hampshire that this material was first developed on a commercial basis ten years ago.

The party consisted of Dr. S. F. Kuipers (Specialist Advisory Officer for Soils and Manuring Matters, Bennekom Institute, Wageningen); Mr. Sluijsmans (Head of the Research Department for Manuring and Agriculture at the Institute of Soil Fertility, Groningen); and Mr. Dijkema (a senior Agricultural Advisory Officer).

In the morning the visitors were shown round the farm of Mr. F. Clifton Sherriff at Ropley, where much experimental work in connection with gas liquor, both as a nitrogenous fertiliser and as a weed and pest control, has been carried out. Before turning farmer, Mr. Sherriff was Assistant Editor of the 'GAS JOURNAL'.

Joining the party was Mr. D. C. E. Johns, (Director of Agricultural Services, Ltd., Reading), who organised a practical demonstration of liquor application to hay aftermath—showing how easily, quickly and cheaply this form of nitrogen can be applied.

Dr. Kuipers and Mr. Sherriff had previously met at a conference at Utrecht, and Dr. Kuipers had expressed a special wish to see Mr. Sherriff's farm in the course of his tour.

The visitors were particularly interested in the trials conducted at this farm, including hitherto unpublished results of recent experiments in the control of free-living nematodes and infective strongyles, which latter take great toll of cattle and sheep if not controlled in the early stages. With the regular application of gas liquor to grazing land, there is some evidence of a degree of control *before* the infective larvae can enter the animal's system.

After lunch at the farm, the party went on to the Chawton depot of Agricultural Services, Ltd., where Mr. Johns explained the process of preparing compound liquid fertilisers based on nitrogenous liquor.

NEWS SUPPLEMENT

Woodall-Duckham: 'Future promising' says chairman

ALTHOUGH net profits for 1961 of Woodall-Duckham are not expected to reach the level of 1960, taken overall the future position is promising, says the Chairman, Mr. T. C. Finlayson, as reported in the *Financial Times*.

The directors anticipate that profits for the current year will enable dividends of 21% on capital to be increased by the recently announced one-for-three scrip issue, to be paid with an adequate margin for reserves, he adds.

The present total would give holders approximately the same overall return as for 1960.

Keen competition

Mr. Finlayson reports that the forward position is much the same as last year. Competition is keen and profit margins are low.

The Company continued to carry out a large volume of construction work for the steel, coal and gas industries and a number of important orders were obtained during the year for coke oven and by-product plants.

Work continued on the design and construction of the two large high pressure gasification plants, one for the South Eastern Gas Board employing the Shell process for the gasification of oil, and the other the plant for the West Midlands Gas Board employing the Lurgi process for the gasification of small coal.

Effluent treatment

Investigations proceeded on improved processes for the biological treatment of effluents from the gas and coking industries.

The restriction in demand for the Company's products by the gas and coal industries continued in 1960.

With the scrip issue proposal, group net profit expanded from £588,922 to £723,009, and the dividend is raised to 27½%.

Fixed assets increased from £2,086,399 to £2,345,129 and commitments amounted to £59,921. Net current assets totalled £3,127,235 (£3,146,427).

ROYAL VISITOR TO GAS STAND

The Princess Royal touring the International Hospital Eq:ipment and Medical Services Exhibition, held at Olympia. The Gas Council's two stands showed the latest developments in the use of gas in hospitals, clinics, nurses' homes and consulting rooms.

Gas ignites world's largest sintering line

GAS is being used to ignite what is claimed to be the world's largest sinter line that has recently been placed in operation by Jones and Laughlin, the large-scale American steelmakers, at their Aliquippa steelworks, Pa., U.S.A. Capable of producing more than 225,000 net tons, or 3,000 railway wagon loads per month, of high quality blast furnace feed, the new plant represents a major step in the company's 1959-61 cost reduction programme.

With the world's largest hearth area and the largest strand width in the U.S. of 13 ft. 2 in., the new sintering machine replaces four single-strand machines installed in 1915.

Gas-fired ignition

As the mixture of ore fines, fluxes and coke is fed onto the sinter bed, the coke is ignited by a gas-fired ignition furnace at the head end of the machine.

Engineered and installed by the Dravo Corporation, Neville Island, the sintering machine is a Dravo-Lurgi travelling grate-type and the Dravo-Lurgi furnace consists of four units, each having its own carriage to permit easy handling by overhead crane.

Each consists of welded steel shell with a rammed refractory lining. The entire furnace measures 18 ft. wide and 18 ft. 4 in. long when the units are bolted.

Three of the four units each contain a row of 21 burners disposed so as to provide a sheet of heat across the entire width of the sinter bed. They are designed for firing with natural gas or coke oven gas and generate a total heat input of 150,000 B.t.u. per ton of sinter product at 8,500 tons per day capacity.

Air-cooled

The structural parts of the furnace that extend over the sinter bed are air-cooled.

The gas mains exhaust into banks of multi-tube mechanical dust collectors. Each of 2 ft. diameter, the tubes are of centrifugally cast alloy steel. On being extracted from the mechanical dust collector by fans, the fumes are delivered to the main venturi stack.

Juniors inspect old and new aspects of Newton Chambers

Left to right are: Mr. C. A. Roberts, Secretary, and Mr. J. Edgar, President, Yorkshire Junior Gas Association; Mr. K. E. Walker, Director in charge of the Engineering and Excavator Divisions of Newton Chambers; Mr. J. A. Taylor, President of the Manchester District Junior Gas Association; and Mr. S. B. Rippon, General Sales Manager, Engineering Division, Newton Chambers.

MEMBERS of the Yorkshire and Manchester District Junior Gas Associations recently visited the Thorncliffe works of Newton Chambers & Co. Ltd. As well as touring the works, the visitors saw a display of papers and drawings recording some of the work done more than a century ago for the gas industry.

The Managing Director, Mr. P. J. C. Bovill in his speech at lunch, said: 'We have been advancing with you since the days of Murdoch, but it is in the last few years that the most revolutionary changes have taken place.' They tried to keep pace with the gas industry developments, but, said Mr. Bovill, 'We get a bit breathless sometimes, particularly when keeping ahead of things in your industry'.

The 120 visitors, headed by their Presidents, Mr. J. Edgar, Yorkshire, and Mr. J. A. Taylor, Manchester District, went first to the exhibition where they were specially interested in the display of old papers.

They then toured the Engineering Division, visiting the light foundry, heavy foundry, machine shop and construction shop.

In Excavator Division

After a reception and lunch at Newton Hall, they went to the Excavator Division, seeing the paint shop, test field, machine shop and assembly line, and afterwards to the new chemical works of the Chemicals Division.

After speaking of the general progress made (as reported above), the Managing Director told the visitors that at the opening of the White Lund (Morecambe) plant the Chairman of the Gas Council had said that was probably the last conventional plant ever to be built.

That was a sobering thought which they had taken to heart. As a result they had built the first high pressure tower purifiers at Westfield.

He mentioned too that at Shotton they had built for the Wales Gas Board a new type of plant for the recovery of pure sulphur from oxide pellets.

They had continued their research on the hydro-refining of benzole and naphthas, and had developed freeze refining techniques.

The drawings and letters displayed in the Exhibition were interesting relics of the days when Newton Chambers were playing an important part in the early development of the gas industry, not only in the United Kingdom but also in many parts of the world.

Interesting drawings shown included those of purifier covers for the Continental Union Gas Company's use in Milan (1879); two purifiers for the Kranholm Gas Department, Germany (1889); purifier, scrubbers and condenser for Worsbrough Gasworks (1861); condenser, scrubbers and purifiers for a Moscow mill (1860); purifier valves for Holmfirth Gas Light Company (1841); and castings for the gasworks at St. Helier, Jersey (1835).

Electrolux: Biggest-ever ad. campaign

THE largest ever publicity campaign for Electrolux refrigerators will be carried out this summer. The broad media plan is based on the use of large spaces in leading national dailies, Sunday and weekly newspapers and full pages in colour in monthly magazines.

The campaign is aimed to reach into 99.1% of households in the middle and upper income groups and 86.4% of households in the lower-middle and lower income groups.

Television forms a major part of the campaign, and during May, June and July there will be continuous transmissions of 30-second spots over the national network, supported by 60-second spots, to give added weight and impact during the Electrolux Refrigerator Fortnight.

W.M.G.B. HAS RECORD YEAR OF GAS SALES

DEARER coal and substantial wage and salary awards have added £1.25 mill. a year to the operating costs of the West Midlands Gas Board. Yet, there has been no increase in the Board's charges for gas, which have been held stable since 1957.

Giving these figures to the West Midlands Gas Consultative Council, the Board's Chairman, Mr. G. le B. Diamond, said that the increased costs, affecting nearly 60% of total expenditure, have been absorbed by further technical and operating efficiencies.

Price stability

Also contributing to the price stability of gas in the area was the fact that sales in the year ended March 31 were a record. The increase in output over the previous year was 2.8%.

Mr. Diamond said the loss of gas sales due to the winter recession in the car trade was counterbalanced by increases to other industries. Sales to large industrial consumers during the year rose 6%.

The domestic sale of gas held steady and there had been no further decline in consumption in the home. It was estimated that 76% of homes in the area were using gas, and about 81% of those adjacent to the distribution system.

In the financial year, coke sales made an overall increase of 7.5%. Direct domestic deliveries were 12% higher, but industrial sales again declined.

For peak loads

The Chairman, in his review, mentioned a further 5 mill. cu.ft. per day liquid gas plant for Nechells works that will be ready by December, 1961, to meet peak load conditions.

Two units of catalytic oil gasification and reforming plant will be ready for Etruria Works, Stoke-on-Trent in December, 1962. These will assist in taking more methane mine gas from neighbouring collieries and provide a combined increase in capacity of at least 8 mill. cu.ft. a day.

More oil and gas found in Siberia

Soviet geologists say that the entire west Siberian lowland occupying an area of nearly 2 mill. sq. km. is rich in oil and gas, states *The Times*. The Soviet news agency Tass said that recently two large oil deposits were discovered there. One is expected to become one of the largest oil fields in the Soviet Union.

NORTHERN BOARD APPRENTICES RECEIVE THEIR 1960 AWARDS

ALL the Northern Gas Board's apprentices were present at a ceremony held in the Distribution Centre, Newcastle upon Tyne, recently, when prizes, donated by the Northern Gas Board, were presented to students for outstanding performances in the 1960 Examinations.

Mr. J. E. White, Deputy Chairman of the Northern Gas Board, presided. In welcoming Alderman Mrs. Gladys Robson, J.P., Chairman of the Newcastle upon Tyne Education Committee and Chairman of the Commonwealth Technical Training Week Committee, who presented the prizes to the successful apprentices, he explained that the function this year had been held over to form the central feature of the Board's efforts during Commonwealth Training Week.

He went on to say that while the need for technicians undoubtedly existed nationally, the requirement for such men was especially important in the gas industry.

Period of change

The industry was passing through a period of change, when not only were new methods of producing gas being developed, but also new fields and techniques for selling gas were emerging.

The approach to central heating and ducted warm air required craftsmen of the highest order to ensure that such appliances were properly installed and maintained.

Also present were Mr. Alan Johnson, Secretary of the Northern Counties Technical Examinations Council, Mr. L. A. Garratt, Board Industrial Relations Officer, Mr. E. A. Easey, Chairman of the Trade Union Side of the Northern Area Joint Industrial Council, Mr. A. Cummings, Chairman of the Newcastle District of the Plumbing Trades Union, Mr. J. H. Innes, Principal of the College of Further Education, Newcastle upon Tyne, and the Divisional General Managers of the Tyneside, Sunderland, Tees-side, Darlington and Cumberland Divisions of the Board.

After presenting the Board's prizes, and the Certificates awarded by the City and Guilds of London Institute and the Northern Counties Technical Examinations Council, Alderman Mrs. Robson stressed the importance of good training for the work carried out by the craftsmen of today.

Performance prize

In the First Year, the prize for outstanding performance went to Frederick Jobson, Tyneside Division. The prize for the next outstanding performance was awarded to Raymond Hughes, Sunderland Division.

At Intermediate Level, the Prize for outstanding performance in Gasfitting Theory and Practice and an Ancillary Subject was awarded to David Grainger, Tees-side Division. The prize for outstanding performance in Gasfitting Theory and Practice only was awarded to Michael Gosling, Blyth Division.

In the Third Year, the prize for outstanding performance in Gasfitting Theory and Practice and an Ancillary Subject was awarded to Bryan Douglass, Tyneside Division. The prize for outstanding performance in Gasfitting Theory and Practice only was awarded to Henry Davis, Tyneside Division.

PRIZEWINNERS

Alderman Mrs. Gladys Robson, Chairman of the Commonwealth Technical Training Week Committee and of Newcastle-upon-Tyne Education Committee, presents prizes to successful apprentices of the Northern Gas Board.

Appeal to save the Provan 'pug'

A NARROW gauge locomotive belonging to the Scottish Gas Board's Provan works, Glasgow, is the subject of a nation-wide appeal by the Railway Enthusiasts' Club.

The narrow gauge system is now out of use at Provan, having been replaced by standard gauge, and the locomotive, known as a 'pug' with a gauge of 2 ft. 6 in., is due to be scrapped.

The 'pug' was purchased after the war to supplement the stock of 40-year-old Barclay tanks at the works, and is an exact replica of the earlier engines. These small engines were required to work under the retort houses, hauling hopper-loads of ash.

The cost of purchasing the locomotive and transporting it to the Club's headquarters at Farnborough, Hampshire, is £120—'a very reasonable sum for an engine that is in full working order,' says the Club.

The Middlesbrough branch of Honeywell Controls Ltd. moves soon from Fletcher Street to new premises at 59/60 Albert Road. The telephone number is unchanged, Middlesbrough 44331 and 44332.

Appliance design contest is reintroduced

A SECTION for the design of domestic gas appliances is to be reintroduced this year in the series of competitions for industrial art bursaries promoted by the Royal Society of Arts.

This section was included in the competitions during the years 1951 to 1955 but not since then. The aim of the contests is to interest students in industrial art and to encourage them in the design of appliances.

The Gas Council has appointed Dr. R. S. Edwards, Chairman of the North Eastern Gas Board, to be its representative on the Bursaries Board in connection with the competitions and has nominated Mr. P. G. Wright, Secretary of the Council's Watson House Centre, and Mr. J. C. E. Fortey, of the Radiation Ltd. design unit at their group research laboratories in Birmingham, to serve on the jury responsible for the administration and adjudication of the domestic gas appliances section of the competition.

Enquiries made in various parts of the country by Market Harborough (Leics.) Urban District Council showed that the majority of old people, having always been used to cooking by gas, preferred a gas cooker to an electric cooker as the use of electricity worried them. The Council has accordingly decided to instal only gas cookers in old people's flatlets which it is building in Bowden-lane, Market Harborough, and to use gas for their central-heating system.

'GAS INDUSTRY DETERMINED TO TAKE LEAD' SAYS UNDER SECRETARY

SPEAKING at the luncheon held at the Carlton Hotel, Great Yarmouth, recently as part of the Eastern Section's 11th Annual General Meeting, Mr. J. A. Beckett, Under Secretary of the Gas Division of the Ministry of Power, congratulated the industry on its initiative in organising and running advanced courses for its executives at Oxford.

This demonstrated its determination to take the lead in battling on with industry on a common front. The Gas Division was now the largest division at the Ministry of Power and was far busier now than it had ever been since the passing of the 1948 Act.

Referring to methane, he said that the proposals for its import were now officially in the Minister's hands. Personally, he was in favour of importing it, since he really believed that the gas industry would have a far greater part to play than in former years. Then the industry had been very conservative, but now it must have every chance of being able to face up to the challenge confronting it.

He was a great believer in gas and had been very cheered when one area board had been able to achieve a 7% increase in its domestic load in the last financial year. Gas, he hoped, was going to be given a chance to get away to something dynamic and to develop on modern lines from an old established industry.

Members of Yorkshire Junior Gas Association examine a B.M. Industrial consumers' meter during a visit to the works of W. C. Holmes & Co. Ltd., recently.

RUSSIANS AT ABERAVON

Mr. E. M. Edwards, Deputy Chairman of the Wales Gas Board (second from left), with Russian visitors to the recent I.G.E./A.G.M., who toured the Aberavon works. They were received by Mr. T. Mervyn Jones, Chairman; Mr. Edwards; Councillor Emanuel, Board Member; Senior Board Officers; Mr. W. D. Rees, Engineer, Port Talbot undertaking; and Mr. W. F. Edwards, General Manager, Port Talbot.

Bowls Tournament

The meeting, lasting two days, began with the Annual Bowls Tournament played on the Britannia Greens. Mr. W. A. Pask won the F. D. Wilson Trophy, Mr. H. Wadsworth the D. W. Wilson Trophy, while other prizes were won by Mr. A. Blenkiron, W. D. Wilson, Mr. D. B. Parkinson and Mr. R. J. Gavin.

In the Annual Golf Competition played over the Great Yarmouth and Caister Courses, Mr. W. W. Paterson won the George Wright Cup, and Mr. K. B. Meggitt the Turner Trophy. Other prizes were won by Mr. S. H. Stokes, Mr. E. T. Warren and Mr. C. A. Macleod.

New Chairman

At the first business session, Mr. K. B. Meggitt of Bedford was elected Chairman, Mr. D. W. Ault of Lincoln, Senior Vice-Chairman, and Mr. W. A. Pask, of Grimsby, Junior Vice-Chairman for the coming year. Mr. J. Hunter-Rioch, Cambridge, was re-elected as Honorary Secretary and Treasurer while Mr. D. B. Parkinson, and Mr. K. C. Rees, both of Watford, were elected as ordinary members of the Management Committee.

In his address to the Section, the retiring Chairman, Mr. E. H. Winch, Divisional Engineer, Cambridge, described in

some detail the changes that had taken place in his division during the 12 years since nationalisation. Describing the changes in the industry as a whole and its effect on the choice of a subject for the Chairman's address he pointed out that nationalisation of the industry, and its consequent integration and functionalisation had, in some ways, narrowed the field of individual experience from which a subject for a chairman's address could be drawn. On the one hand, functionalisation might provide some with the opportunity for greater detailed knowledge and experience of a subject in a specialised field. For others, it might provide general knowledge in a wider sphere without quite the same opportunity for detailed specialisation.

Co-ordination

Whichever might be the case, within a functionalised organisation those responsible for a particular function must always remain aware of the necessity for full co-ordination and co-operation with the other functions—especially when, as in the gas industry, they were complementary to one another.

In 1949 the Cambridge Division had consisted, he said, of 19 gas undertakings, varying in size from about 10 to 1,600 mill. cu.ft. per annum; most of them had been very small, and some had been suffering badly from the effects of shortage of men, materials and money, which existed during World War II.

There were now only five gas production stations in the Division, all linked together by a grid mains system which supplied 15 holder stations within the Division, and one just over its border in the Ipswich Division; all these holder stations were formerly gasworks.

Considerable changes in production plant had been made.

Ten-year plan

In 1952, the Board had requested each of its five divisions to prepare a 'ten-year plan' of development. The plan for the Cambridge Division had been based on integration of the smaller gas undertakings with the larger, and the concentration of gas production into these five gasworks.

The original proposals had envisaged routing the grid mains through as many villages and small towns as possible which had not previously had a gas supply. Subsequent experience had proved that the number of gas consumers gained from long established properties in such places could not justify the cost of local low pressure distribution mains, or of taking the grid mains to them.

By the time detailed mainlaying projects had been prepared for the grid, it had become obvious that it was more important to plan the most direct routes for the mains, having regard to the geographical features of the land, and the need to link up all the smaller gasworks. Deviations to include villages not previously supplied had been made only where the additional cost was slight, and there had been reasonable prospect of obtaining new loads.

This had proved successful, but the number of consumers obtained en route had so far been rather disappointing.

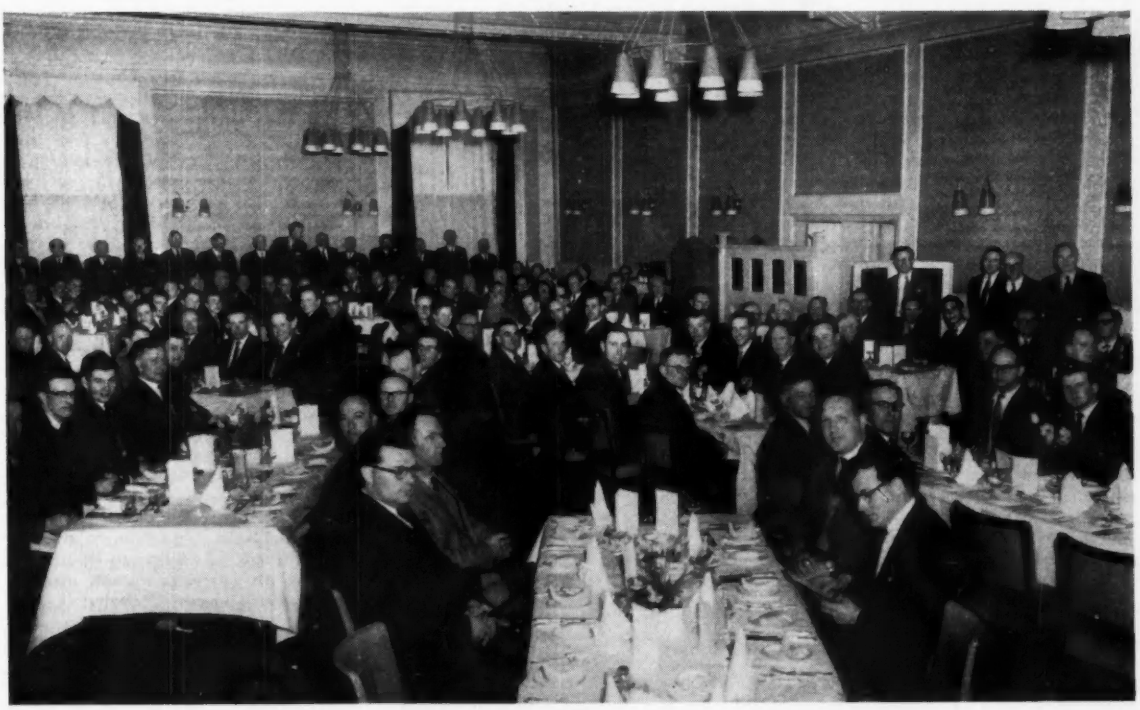
When the ten-year plan had been prepared, the estimated rate of increase in gas output was an average of 1.5% per annum over the first ten years, and 1.2% over a 20-year period. In fact, the increase from 1950-51 to 1960-61 has been 4.67%, or an average of approximately .5% per annum over the ten years—one third of that envisaged in 1952.

The advent of whole-house heating, with its prospects of increasing domestic consumption in some cases from the present 90-100 therms per annum per consumer to 400 therms or more might yet make it possible to achieve the average increase of 1.2% per annum over a 20-year period.

Metal refining

The first mains for the grid had been laid in June, 1954, and a planned programme for completion of the whole of the Divisional grid had been embarked upon, but this had been soon upset by a decision to move a factory for refining precious metals from London to Royston, the gas consumption of which was expected to be nearly three quarters of the annual consumption of the whole of Royston. It was quite impossible to

JUNIORS SEE DERBYSHIRE FIREBRICK COMPANY



The 87 members of the Manchester District Junior Gas Association at luncheon at Buxton, during their visit to the Derbyshire Silica Firebrick Company at Friden.

'Hullo my darlings . . .'

. . . This was the famous cry heard at Highworth, Swindon, recently when TV comedian Charlie Drake opened the South Western Gas Board's twelfth house in its continuing showhouse programme, which features central and warmed air heating and other gas appliances. In the photograph Charlie is officially opening the house and standing next to him is Mr. A. B. Horsfield, the Board's Swindon District Engineer and Manager.

supply this from the local gasworks, so the link between Royston and Cambridge was brought forward in the programme by nearly a year.

To make the link with Cambridge economically attractive it had been decided to use cast iron mains owing to their lower cost. Fifteen miles of 6-in. pipes had been laid, for working at a maximum pressure of 30 p.s.i. adequate for possible increases in load for a considerable number of years.

The main grid had then been completed by extending the 12-in. diameter main from Huntingdon to Peterborough. This 35.6-mile section of 12-in. main had been designed at the request of Mr. J. H. Dyde, at that time Deputy Chairman of the Board, to be suitable for bulk transmission of gas from possible outside sources, either northwards or southwards to other parts of the Board's area. Prospective developments concerning sources of gas scarcely thought possible in 1955, now seemed to indicate that this main may be used for bulk transmission much sooner than seemed likely when the grid was planned in detail.

Main objective

The main objective as far as gas production had been concerned was to utilise coal gas capacity to the maximum possible extent throughout the year. By March 31, 1960, when the integration scheme had been virtually completed, the annual load factor for the Division on available coal gas production capacity, after making allowance for resetting, had been 93%.

The continuous rise in cost of labour and materials in recent years had masked the effect of integrated production on the cost of gas made. To adjust 1960/61 costs accurately to those applicable in 1953/54 would be a major task. Figures showed, however, a rise in the net cost of gas made from 11.4d. per therm to 12.46d. per therm, an increase of 9.3%, and depreciation chargeable to production from .55d. to .91d. per therm, an increase of 61.8%, or an overall increase of 11.8%.

In the same period the cost of coal had increased by 41%, wages by 54%, general engineering materials by 75%, cast iron pipes by 45-50%, and steel pipes by 53%. These were approximate percentages only, and against them must be offset an increase of 108% in the revenue received from by-products. The present price of gas in the Cambridge Division would have had to have been appreciably higher if the Divisional programme of integration had not been carried through.

In the period since vesting date, the pattern of organisation had materially changed at Headquarters level and below, in each of the separate functions.

In the early years of nationalisation, engineering matters in the Cambridge Division had been controlled locally at District level. As centralisation of gas production became economically expedient, planning and control had become centralised at Divisional level. These were now passing to Headquarters as new gas production techniques and new raw materials became available and opportunities for even wider integration of the sources of supply were foreshadowed. This interestingly demonstrated, not only the logical transition from local to centralised control, but at the same time revealed the strength of the industry in adapting itself to present day conditions and preparing for future service to the community in spite of it now being over 150 years old.

COOKER WAS BALL PRIZE

At the recent London Press Club Ball at Quaglino's Restaurant, Miss Christine Hawkins, of 20 Harford Drive, Watford, Herts, was presented with a voucher for a Flavel Equerry gas cooker by Mr. J. Franklin, Sales Manager of Sidney Flavel & Co. Ltd.

Competition

Addressing members of the section at its final business session, Mr. J. H. Dyde, Chairman of the Eastern Gas Board spoke of ways of improving the industry's competitive position. Competition in the fuel industries was intensifying, he said, and the first way of approaching this was to reduce the cost of producing gas and the second was to look at the possible economies which could be made in all other costs that go to make up the delivered price of gas to the consumer.

In the first category, the long term approach was the introduction of new gas-making techniques—large scale high pressure coal gasification plants sited on or near the collieries, and large scale gasification and reforming plants located for ready access to petroleum refineries, and last but not least the importation of natural gas.

Methane importation

He referred to the Gas Council's report on a project for the importation of methane which was now before the Minister, and hoped that the economic advantages which would be its result, would prevail against the political and strategic arguments which would be raised against it. He thought that the Eastern Board in relation to its size was involved to a greater extent than the other seven boards immediately concerned.

His Board had been flexible in its long term planning and was poised to receive gas from coal gasification plants situated in the Midlands, and to take its supply from its own 12-in. high pressure main operating at 350 p.s.i. at an appropriate

point between Peterborough and Bedford. This main could serve an extensive part of the Board's area and at no great cost could be extended southward to serve the New Towns.

Equally the methane distribution main planned from the Canvey Island terminal and sited to serve several boards would run across part of the southern territory of the Eastern Board's area.

If methane became available, it would be piped to continuous reforming plants at Dunstable, Hertford and Norwich, all of which would include CO conversion plants to reduce toxicity. This gas would be mixed with gas from existing plants. So much for the long term, but in the meantime his Board planned to cover an interim period of three to five years, as a number of traditional carbonising plants fell into disuse, by the erection of several types of reforming plants capable of using p.f.d. or l.p.g. as a feed stock.

Closure of works

Such integration schemes as show a requisite level of profitability had already been completed and had enabled 53 out of the original 92 works to close down. Where, however, the cost of linkage to a main system did not show a profitable use of capital, the problem would best be met by direct application of butane- and/or propane-air systems.

Oil had made severe inroads in the industrial coke market, though there was an increasing demand for domestic smokeless fuel. His Board's policy was therefore the maximum production of specification coke under the proprietary names of Gloco and Cleanglow. Packaged cokes had been introduced on a substantial scale over the last year; the whole operation had since been investigated by work study methods which have revealed opportunities for increasing the profitability of these sales.

In the second line of attack, Mr. Dyde said that consumer service costs had risen steeply in the last few years, so had the rendering and collection of accounts, and there was ample room for more efficient methods and greater productivity.

Following the pioneer work of I.C.I. and Unilever in introducing Organisation and Methods and work study, many industrial organisations and public authorities, and his own Board, had adopted these tools of management.

O and M Department

An O and M department had been set up by the Eastern Board, and its function was (a) the simplification and rationalisation of organisational procedure within the framework laid down by the Board, (b) the simplification of office work and the control of the proliferation of paper (c) the elimination of unproductive work and (d) the maintenance of systems and methods in line with the needs of the business. Since its inception the O and M department had undertaken about 30 varied assignments in offices, works and on the district. Of these, an examination of the method of operating gas fitters, service to consumers and a study of maintenance and emergency work including the use of short wave radio, had shown where great potential improvements in fact existed. The strategic study of the siting of service centres by work study engineers had made possible a reduction of nine centres in the Tottenham Division to three, serving 120,000, 80,000 and 45,000 consumers respectively.

Coke delivery, the maintenance and laying of service pipes, the size of gangs, and the economic use of road breaking machinery had been studied, and the changes made possible had shown that here too a considerable potential in the saving of costs and a more economic use of men and machines existed. The application to administration and offices had shown so far that staff reductions of between 16 and 20% could be made.

As a result of all this activity, it had been demonstrated that annual savings by March, 1964 of £300,000 could be made. Of this sum some £130,000 a year had been realised. The original estimate might in fact have been too conservative.

Mr. Dyde went on to refer to the possible help to the competitive position of gas by an increase in efficiency in gas appliances. This was especially true of the new gas-fired room heaters with efficiencies of 60% and above. Even at the lower figure, compared with the old radiant-only fire, and a commodity price of 20d. per therm equivalent price in output of useful therms could be calculated at 13.33d. per useful therm.

In the industrial field, ingenuity in the design of gas-fired furnaces had put gas in an unassailable position in some cases, especially in the heat treatment of metals field. The development of the SE-Duct flue and the balanced flue had made gas applicable to large blocks of flats.

MEDAL WINNERS AT PALACE

Cynthia Wood (19) *and Elizabeth Moore* (20) *of the North Western Gas Board Mersey Group, each received gold awards from the Duke of Edinburgh at Buckingham Palace. Cynthia and Elizabeth both worked through the gas board group of the award scheme, which was formed two years ago. They are seen with their Group Leader, Miss Beryl Boycott from the Accountancy Section.*

FOR CAREFREE COOKING

One of the Scottish Gas Board stands at the Edinburgh Evening News *Ideal Home Exhibition. Orders worth £10,169 were signed up—326 firm orders as follows: Cookers 142, wash boilers 2, washing machines 2, water heaters 21, space heaters 40, refrigerators 87, sundries 32.*

PERSONAL NOTES

MR. J. W. MILTON, technical representative of the British Road Tar Association, has retired after more than 32 years' service. He was one of the original members of the staff of the B.R.T.A., and its first technical representative. He has served in this capacity in many parts of England, mainly in the north, and has also served tar interests both in Scotland and Ireland. During the course of this work he has become well-known to a large number of surveyors and contractors and has established a high reputation. He has also given many lectures on tar and its uses to engineer audiences and to students at numerous technical colleges.

MR. G. H. JOHNSTON has been appointed Managing Director of the Meltham Silica Firebrick Co. Ltd., one of the Genefax Group of Companies. He has held the position of general manager since 1954. Mr. Johnston began his career in the refractories industry at the Silica Brick Works of the Consett Iron Co. Ltd., followed by a period of service with the Newbould Silica Firebrick Co. Ltd. in Australia. Mr. Johnston joined General Refractories Ltd. in 1934 and was successively manager of the Wharncliffe Works and Lowood Silica Brick Works before moving to Meltham.

MR. A. T. GRISENTHWAITE, technical department manager with the Power-Gas Corporation, Stockton-on-Tees, is to retire after 44 years' service. With the exception of 18 months, Mr. Grisenthwaite has spent the whole of his working career with that Stockton firm, joining the Company when it had only 60 employees. MR. R. W. RUTHERFORD, Managing Director of the Power-Gas Corporation, made a number of presentations to Mr. Grisenthwaite.

MR. C. E. CAREY, Chemical Production Manager, South Eastern Gas Board, and MRS. H. S. MAIR, Deputy Chairman, South Eastern Gas Consultative Council, have been awarded the Order of the British Empire in this year's Birthday Honours. MR. C. CURRY, Assistant Engine and Exhausterman, North Shields gasworks, MR. V. W. GRUNDY, First Class Gasfitter, Sheffield District of the East Midlands Gas Board, MR. S. RAMSEY, Chief Steward of the Methane Pioneer, and MR. W. J. TAYLOR, Pressureman, Mersey Group of the North Western Gas Board, have been awarded the British Empire Medal.

MR. V. R. W. YOUNG, Education and Training Officer of the West Midlands Gas Board, has been elected Chairman of the Birmingham Branch of the Institute of Personnel Management. Mr. Young is the first Education and Training Officer to be elected Chairman of the Branch, which is one of the largest in the country with over 200 members. He joined the West Midlands Board in 1953. Mr. Young has been a member of the Institute since 1952, and is also a member of the National Council of the Institute. His term of office as Chairman will be for two years.

MR. G. W. SUTHERLAND is retiring from his position as local manager with the North Thames Gas Board at their offices in Walham Green. Mr. Sutherland joined the former Gas Light and Coke Company in 1924 as a gas supply pupil, and in 1926 worked on the Company's New Housing Section in the Brentford area. He later became manager of the Dealers' Section. In 1953 he became local manager at Walham Green.

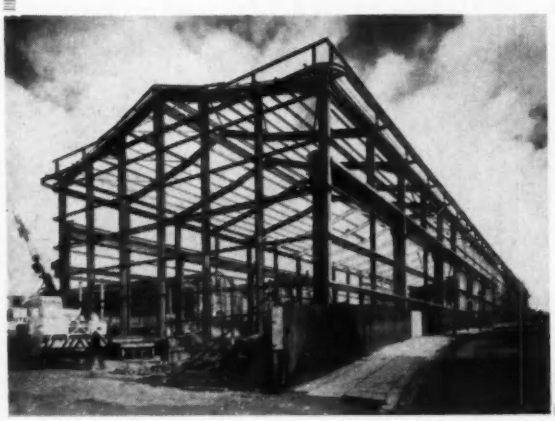
MR. J. E. BRANDON, divisional controller of Stores, Purchasing and Transport of the Scottish Gas Board's Glasgow and Western Division, has been appointed Divisional Manager of Edinburgh and South-Eastern Division, in succession to MR. G. J. B. COX, who retired at the end of April. Mr. Brandon, who is 43, was senior district inspector and assistant to the distribution superintendent of the Rugby Gas Company in 1946, and in 1950 rose from chief inspector to service superintendent, and in 1953 became district manager. In 1957, he was transferred to his present position with the Glasgow and Western division of the Scottish Gas Board.

OBITUARY

MR. A. W. SMITH, C.B.E., general manager and secretary of the City of Birmingham Gas Department from 1919 to 1945, has died at the age of 81. He entered the Department as an apprentice in 1895. He was a member of the Central Executive Board of the National Gas Council from 1917 to 1945. Mr. Smith served as chairman of the British Commercial Gas Association in 1937 and of the Conjoint Conference of Public Utility Associations in 1940-41. In the latter year he became a member of the Fuel Research Board, D.S.I.R., on which he served until his retirement in 1945. From 1949 to 1951 he was a member of the West Midland Gas Board. A Fellow of the Chartered Institute of Secretaries, he was awarded the C.B.E. in 1943.

MR. W. A. SHAW, a director of Evershed & Vignoles Ltd., has died at the age of 65 after 48 years' service with the Company. Mr. Shaw joined the Test Room staff of Evershed & Vignoles Ltd. in 1913, and was for several years engaged in development and experimental work on a wide range of instruments. He transferred to the commercial side in 1919 as a technical assistant. In 1949 he was appointed general sales manager in succession to MR. F. C. KNOWLES, whose chief assistant he had been for 30 years, and in 1953 was elected to the Board of the Company as sales director. Recently he was appointed company secretary.

WHESSOE'S NEW WELDING SHOP



Structural steelwork of the new welding shop III at the Darlington works of Whessoe Ltd. The fabrication and erection of approximately 760 tons of structural steel has recently been completed by Dorman Long (Bridge & Engineering) Ltd.

COMING EVENTS

June 28.—I.G.E., SOUTH WESTERN SECTION: Summer Meeting and Ladies' Day.

July 1. — LONDON AND SOUTHERN JUNIORS: Ladies' Day. Visits to Southall Works, Beaconsfield, Marlow and the River Thames.